REGULATORY ASSIGNMENT CONTROL SHEET

LOG CONTROL NUMBER: 177 **ANALYST ASSIGNED: CAREY**

ACTION: OT

TITLE: NIDRR'S FY 09 COMBINED NPP for 4 RRTCs and 3RERCs-NATIONAL INSTITUTE OF DISABILITY AND REHABILITATION RESEARCH

RECEIVED: 9/19/2008

DATE ASSIGNED: 9/22/2008

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ANALYST SIGNATURE: Sheila Carey

COMPLETION DATE: 9-24-08

FINAL APPROVAL: [signature] **DATE:** 9-24-08

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REGULATIONS CLEARANCE SHEET
OFFICE OF THE GENERAL COUNSEL
DIVISION OF REGULATORY SERVICES (DRS)

DRAFT NO.: 1 **DATE:** September 22, 2008

Please review the attached document, check the appropriate box below, sign, and return with your comments, if any, or e-mail your response and any comments to *LaTanya Cannady (6E217)*. Your response is due by COB, September 30, 2008 .

Office of the Secretary*
[X] Deborah Winters, Ex. Sec., 7C100
[X] Alycyn Keeling, 7W223
cc: Holly Kuzmich

Office of the Deputy Secretary*
[X] Andrew Dean
cc: Wendy Tada

Office of Planning, Evaluation & Policy Development*
[X] Paula Hill
[X] James Woodsome
cc: Ellen Campbell
cc: Meagan Sweeney
[X] Budget Service, Maria Wade, 5W311

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Deputy General Counsel
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cc: IC Docketmgr
cc: Angela Arrington
cc: James Hyler
cc: Kate Mullan
[] Dianne Novick, RIMS {Send only SORs)

Chief Financial Officer & Chief Information Officer
[X] Michael Holloway, 4E231
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Cc: Greg March, 5095 PCP
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Cc: Jennifer Sheehy
Cc: Roseann Ashby

Center for Faith-Based & Community Initiatives
[X] Richard Boucher
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Program Contact: Donna Nangle **Scheduler:** Melanie Winston

CHECK ONE

[X] Approved
[ ] Approved subject to minor changes
[ ] Not approved—see comments

TYPE AND TITLE OF DOCUMENT: NIDRR's FY 09 Combined NPP for 4 RRTCs and 3 RERCs

SIGNATURE: [signature] **DATE:** 9-24-08

COMMENTS: ____________________

4000-01-U

DEPARTMENT OF EDUCATION

National Institute on Disability and Rehabilitation Research--Disability and Rehabilitation Research Projects and Centers Program--Rehabilitation Research and Training Centers (RRTCs) and Rehabilitation Engineering Research Centers (RERCs)

Catalog of Federal Domestic Assistance (CFDA) Numbers:

84.133B Rehabilitation Research and Training Centers and

84.133E Rehabilitation Engineering Research Centers Program

AGENCY: Office of Special Education and Rehabilitative Services, Department of Education.

ACTION: Notice of proposed priorities for RRTCs and RERCs.

SUMMARY: The Assistant Secretary for Special Education and Rehabilitative Services proposes certain funding priorities for the Disability and Rehabilitation Research Projects and Centers Program administered by the National Institute on Disability and Rehabilitation Research (NIDRR). Specifically, this notice proposes four priorities for RRTCs and three priorities for RERCs. The Assistant Secretary may use these priorities for competitions in fiscal year (FY) 2009 and later years. We take this action to focus research attention on areas of national need. We

intend these priorities to improve rehabilitation services and outcomes for individuals with disabilities.

DATES: We must receive your comments on or before [INSERT DATE 30 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].

ADDRESSES: Address all comments about these proposed priorities to Donna Nangle, U.S. Department of Education, 400 Maryland Avenue, SW., room 6029, Potomac Center Plaza, Washington, DC 20202-2700. Telephone: 202-245-7462.

If you use a telecommunications device for the deaf (TDD), call the Federal Relay Service (FRS), toll free, at 1-800-877-8339.

If you prefer to send your comments through the Internet, use the following address: donna.nangle@ed.gov

You must include the term "Proposed Priorities for RRTCs and RERCs" and the priority title in the subject line of your electronic message.

FOR FURTHER INFORMATION CONTACT: Donna Nangle. Telephone: (202) 245-7462 or by e-mail: donna.nangle@ed.gov.

If you use a TDD, call the FRS, toll free, at 1-800-877-8339.

SUPPLEMENTARY INFORMATION:

This notice of proposed priorities is in concert with President George W. Bush's New Freedom Initiative (NFI) and NIDRR's Final Long-Range Plan for FY 2005-2009 (Plan). The NFI can be accessed on the Internet at the following site: http://www.whitehouse.gov/infocus/newfreedom

The Plan, which was published in the Federal Register on February 15, 2006 (71 FR 8165), can be accessed on the Internet at the following site: http://www.ed.gov/about/offices/list/osers/nidrr/policy.html

Through the implementation of the NFI and the Plan, NIDRR seeks to: (1) improve the quality and utility of disability and rehabilitation research; (2) foster an exchange of expertise, information, and training to facilitate the advancement of knowledge and understanding of the unique needs of traditionally underserved populations; (3) determine best strategies and programs to improve rehabilitation outcomes for underserved populations; (4) identify research gaps; (5) identify mechanisms of integrating research and practice; and (6) disseminate findings.

One of the specific goals established in the Plan is for NIDRR to publish all of its proposed priorities, and

following public comment, final priorities, annually, on a combined basis. Under this approach, NIDRR's constituents can submit comments at one time rather than at different times throughout the year, and NIDRR can move toward a fixed schedule for competitions and more efficient grant-making operations. This notice proposes priorities that NIDRR intends to use for RRTC and RERC competitions in FY 2009 and possibly later years. However, nothing precludes NIDRR from publishing additional priorities, if needed. Furthermore, NIDRR is under no obligation to make an award for each of these priorities. The decision to make an award will be based on the quality of applications received and available funding.

Invitation to Comment:

We invite you to submit comments regarding these proposed priorities. To ensure that your comments have maximum effect in developing the notice of final priorities, we urge you to identify clearly the specific proposed priority or topic that each comment addresses.

We invite you to assist us in complying with the specific requirements of Executive Order 12866 and its overall requirement of reducing regulatory burden that might result from these proposed priorities. Please let us

know of any further opportunities we should take to reduce potential costs or increase potential benefits while preserving the effective and efficient administration of the program.

During and after the comment period, you may inspect all public comments about these proposed priorities in room 6030, 550 12th Street, SW., Potomac Center Plaza, Washington, DC, between the hours of 8:30 a.m. and 4:00 p.m., Eastern time, Monday through Friday of each week except Federal holidays.

Assistance to Individuals With Disabilities in Reviewing the Rulemaking Record

On request we will provide an appropriate accommodation or auxiliary aid to an individual with a disability who needs assistance to review the comments or other documents in the public rulemaking record for this notice. If you want to schedule an appointment for this type of accommodation or aid, please contact the person listed under FOR FURTHER INFORMATION CONTACT.

Purpose of Program: The purpose of the Disability and Rehabilitation Research Project and Centers Program is to plan and conduct research, demonstration projects, training, and related activities to develop methods,

procedures and rehabilitation technology that maximize the full inclusion and integration into society, employment, independent living, family support, and economic and social self-sufficiency of individuals with disabilities, especially individuals with the most severe disabilities, and to improve the effectiveness of services authorized under the Rehabilitation Act of 1973, as amended.

Program Authority: 29 U.S.C. 762(g), 764(a), 764(b)(2), and 764(b)(3).

Applicable Program Regulations: 34 CFR part 350.

PRIORITIES:

In this notice, we are proposing four priorities for RRTCs and three priorities for RERCs.

For RRTCs, the proposed priorities are:

- Priority 1--Improved Employment Outcomes for Individuals with Psychiatric Disabilities.
- Priority 2--Transition-Age Youth and Young Adults with Serious Mental Health Conditions.
- Priority 3--Improving Measurement of Medical Rehabilitation Outcomes.
- Priority 4--Developing Strategies to Foster Community Integration and Participation for Individuals with Traumatic Brain Injury.

For RERCs, the proposed priorities are:

- Priority 5--Telerehabilitation.
- Priority 6--Telecommunication.
- Priority 7--Cognitive Rehabilitation.

Rehabilitation Research and Training Centers (RRTCs)

The purpose of the RRTC program is to improve the effectiveness of services authorized under the Rehabilitation Act of 1973, as amended, through advanced research, training, technical assistance, and dissemination activities in general problem areas, as specified by NIDRR. Such activities are designed to benefit rehabilitation service providers, individuals with disabilities, and the family members or other authorized representatives of individuals with disabilities. In addition, NIDRR intends require all RRTC applicants to meet the requirements of the General Rehabilitation Research and Training Centers (RRTC) Requirements priority that it published in a notice of final priorities in the Federal Register on February 1, 2008 (72 FR 6132). Additional information on the RRTC program can be found at:

http://www.ed.gov/rschstat/research/pubs/res-program.html#RRTC

Statutory and Regulatory Requirements of RRTCs

RRTCs must--

- Carry out coordinated advanced programs of rehabilitation research;
- Provide training, including graduate, pre-service, and in-service training, to help rehabilitation personnel more effectively provide rehabilitation services to individuals with disabilities;
- Provide technical assistance to individuals with disabilities, their representatives, providers, and other interested parties;
- Demonstrate in their applications how they will address, in whole or in part, the needs of individuals with disabilities from minority backgrounds;
- Disseminate informational materials to individuals with disabilities, their representatives, providers, and other interested parties; and
- Serve as centers of national excellence in rehabilitation research for individuals with disabilities, their representatives, providers, and other interested parties.

Proposed Priorities:

Priority 1--Improved Employment Outcomes for Individuals with Psychiatric Disabilities

Background:

Individuals with psychiatric disabilities have one of the lowest rates of employment of any disability group--only one in three individuals with psychiatric disabilities is employed (New Freedom Commission on Mental Health, 2003). A national survey used to monitor the mental health system and its outcomes found that of more than 3,400 consumers of mental health services, 67 percent were unemployed. Additionally, job retention is a major challenge for individuals with psychiatric disabilities (Murphy, Mullen & Spagnolo, 2005). Among the many barriers to employment listed, 23 percent of respondents reported a lack of vocational services (Hall et al., 2003). Limits on the availability and accessibility of vocational services for this population are further compounded by ineffective collaboration between vocational rehabilitation (VR) agencies and mental health programs (Dew & Alan, 2005).

A second barrier to improved employment outcomes for individuals with psychiatric disabilities is the limited effectiveness of vocational services for this population. For example, individuals with mental or psychosocial

impairments, the largest group exiting the State VR Services program in FY 2003, realized the lowest rate of employment (United States Government Accountability Office, 2005). The New Freedom Commission on Mental Health reported that "most vocational rehabilitation services are ineffective for the small proportion of people with mental illness who manage to get them" (New Freedom Commission on Mental Health, 2003, p. 40).

Another barrier to improved employment outcomes for individuals with psychiatric disabilities concerns knowledge translation. Evidence-based and promising approaches are not being incorporated into existing practice in an effective and consistent manner (Casper & Carloni, 2007, Dew & Alan, 2005). There is extensive documentation about the need to accelerate the incorporation of research findings in mental health service delivery to improve outcomes for individuals who receive such services (Institute of Medicine, 2001; New Freedom Commission on Mental Health, 2003; Substance Abuse and Mental Health Services Administration, 2005).

The barriers to employment for individuals with psychiatric disabilities are compounded for individuals from racial, cultural, or linguistic minorities and for

individuals with co-occurring mental and physical health conditions. A 2001 report by the United States Public Health Service, Office of the Surgeon General, notes that this population faces serious barriers to competent mental health care, suffer a greater loss to overall health and productivity, and bear a greater burden from unmet mental health needs. In 2005, the Substance Abuse and Mental Health Services Administration issued a report, Transforming Mental Health Care in America that calls for the expansion of access to quality mental health care addressing the needs of racial and ethnic minorities and people in rural areas--demonstrating the continued need for enhanced services to people from diverse backgrounds.

Prior research funded by NIDRR has advanced the knowledge base in a number of areas related to the employment of individuals with psychiatric disabilities. Topics that have been investigated by NIDRR-funded researchers include recovery, psychiatric and vocational rehabilitation, supported education, peer supports, community integration, stigma, workplace accommodations, and knowledge translation of employment research.

Mental health research funded by NIDRR and others has led to advances in theory development, measurement tools,

community-based supports, and treatment options for this population. For example, supported employment is described as an effective and evidence-based approach (Bond, 2004; Mueser et al., 2004; New Freedom Commission on Mental Health, 2003). One study found that 60-80 percent of individuals with serious mental illnesses who received supported employment services obtained at least one competitive job, as compared with less than 20 percent of individuals using traditional vocational programs (Bond, 2004). Despite these advances, further research is needed if employment outcomes for individuals with psychiatric disabilities are to be maximized. This research should include a focus on improved interventions, enhanced system capacity, and increased knowledge translation of findings.

References:

Bond, G.R. (2004). Supported employment: Evidence for an evidence-based practice. Psychiatric Rehabilitation Journal (27)4: 345-359.

Casper, E.S. & Carloni, C. (2007). Assessing the underutilization of supported employment services. Psychiatric Rehabilitation Journal (30)3: 182-188.

Dew, D.W. & Alan, G.M. (Eds.). 2005. Innovative methods for providing VR services to individuals with

psychiatric disabilities (Institute on Rehabilitation Issues Monograph No. 30). Washington, DC; The George Washington University, Center for Rehabilitation Counseling Research and Education.

Hall, L.L., Graf, A C., Fitzpatrick, M J., Lane, T., & Birkel, R. (2003). Shattered Lives: Results of a National Survey of NAMI Members Living with Mental Illnesses and their Families. Treatment/Recovery Information and Advocacy Database (TRIAD) Report.

Institute of Medicine. (2001). Crossing the Quality Chasm: A New Health System for the 21st Century. Washington, DC: National Academy Press.

Mueser, K.T., Clark, R.E., Haines, M., Drake, R.E., McHugo, G.J., Bond, G., Essock, S.M., Becker, D.R., & Wolfe, R. (2004). The Hartford study of supported employment for persons with severe mental illness. Journal of Consulting and Clinical Psychology, (72)3: 479-490.

Murphy, A.A., Mullen, M.G., & Spagnolo, A.B. (2005). Enhancing Individual Placement and Support: Promoting Job Tenure by Integrating Natural Supports and Supported Education. American Journal of Psychiatric Rehabilitation, (8): 37-61.

New Freedom Commission on Mental Health. (2003). Achieving the Promise: Transforming Mental Health Care in America. Final Report. (DHHS Pub. No. SMA-03-3832). Rockville, MD: Author.

Substance Abuse and Mental Health Services Administration, U.S. Department of Health and Human Services. (2005). Transforming Mental Health Care in America. Federal Action Agenda: First Steps. (DHHS Pub. No. SMA-05-4060.) Rockville, MD: Author.

United States Government Accountability Office. (2005). Vocational Rehabilitation: Better Measures and Monitoring Could Improve the Performance of the VR Program. GAO-05-865.

United States Public Health Service, Office of the Surgeon General. (2001). Mental Health: Culture, Race, and Ethnicity: A Supplement to Mental Health: A Report of the Surgeon General. Rockville, MD: Department of Health and Human Services, U.S. Public Health Service.

Proposed Priority:

The Assistant Secretary for Special Education and Rehabilitative Services proposes a priority for a Rehabilitation Research and Training Center (RRTC) on Improved Employment Outcomes for Individuals with

Psychiatric Disabilities. The RRTC must conduct rigorous research, training, technical assistance, and knowledge translation activities that contribute to improved employment outcomes for individuals with psychiatric disabilities. Under this priority, the RRTC must be designed to contribute to the following outcomes:

(a) Improved models, programs, and interventions to enable individuals with psychiatric disabilities to obtain, retain, and advance in meaningful, competitive employment of their choice. The RRTC must contribute to this outcome by --

(1) Identifying or developing, and testing innovative interventions including those that emphasize consumer direction, peer supports, and community living, including a focus on individuals from traditionally underserved groups (e.g., individuals from diverse racial, ethnic, linguistic, and geographic backgrounds, and individuals with multiple disabilities).

(2) Expanding the applicability of current evidence-based approaches to include individuals from traditionally underserved groups (e.g., individuals from diverse racial, ethnic, linguistic, and geographic backgrounds, and individuals with multiple disabilities). Current evidence-

based approaches include but are not limited to supported employment.

(b) Enhanced system capacity to facilitate employment outcomes for individuals with psychiatric disabilities. The RRTC must contribute to this outcome by --

(1) Establishing and implementing partnerships between State vocational rehabilitation (VR) agencies, State and local mental health programs, and consumer-directed programs, to better coordinate the services that they provide to individuals with psychiatric disabilities; and

(2) Conducting a review and synthesis of research and development related to employment accommodations for individuals with psychiatric disabilities, including an evaluation of methods, costs, barriers, facilitators, and innovative approaches.

(c) Increased incorporation of employment-related mental health research findings into practice or policy. The RRTC must contribute to this outcome by coordinating with appropriate NIDRR-funded knowledge translation grantees to advance or add to their work in the following areas --

(1) Collaborating with stakeholder groups to develop, evaluate, or implement strategies to increase utilization of employment-related mental health research findings; and

(2) Conducting training, technical assistance, and dissemination activities to increase utilization of employment-related mental health research findings.

In addition to the above outcomes, the RRTC must:

- Through consultation with the NIDRR project officer, collaborate with existing NIDRR grantees that focus on employment, psychiatric disability, and knowledge translation. Partners in this collaboration will include but are not limited to the NIDRR-funded RRTC for Vocational Rehabilitation Research, the DRRP on Innovative Knowledge Dissemination and Utilization for Disability and Professional Organizations and Stakeholders, and relevant field-initiated grants.

- Collaborate with State VR agencies, State and local mental health programs, and consumer-directed groups.

Priority 2--Transition-Age Youth and Young Adults with Serious Mental Health Conditions

Background:

Transition to adulthood is especially challenging for youth with serious mental health conditions. Estimates of

the prevalence of serious mental health conditions in this age group are complicated by the fact that diagnostic categories applicable to individuals below the ages of 18 or 21 differ from those applicable to adults. As defined by the Substance Abuse and Mental Health Services Administration (SAMHSA), the term "serious emotional disturbance" (SED) refers to diagnosable mental, behavioral, or emotional disorders resulting in functional impairment that substantially interferes with major life activities in individuals from birth to age 18 (SAMHSA, 1993); between 1 million and 3.2 million transition-age youth have disorders severe or disabling enough to be considered SED (Davis, 2003). The term "serious mental illness" is used for comparable disorders in individuals aged 18 and older (SAMHSA, 1993). For this priority, we define the target population as individuals between the ages of 14 and 30, inclusive, who have been diagnosed with either SED or serious mental illness, as defined by SAMHSA. We will refer to these individuals as having serious mental health conditions (SMHC).

As youth with SMHC transition to adulthood, they are at increased risk for a variety of negative outcomes, including but not limited to arrest, substance abuse,

unplanned pregnancy, dropping out of school, unemployment, difficulties in family and peer relationships, and difficulties with independent living (Armstrong et al., 2003; Jonikas et al., 2003). Transition-age youth with disabilities, particularly those with SMHC, who come from disadvantaged backgrounds (e.g., youth raised in foster care, from low-income backgrounds, with histories of abuse, or with histories of substance abuse), are at even greater risk for negative outcomes (Bobier & Warwick, 2005; Geenen et al., 2005; Lubman et al., 2007; National Council on Disability, 2008).

There are a number of promising approaches to transition-related intervention for this population. There is some evidence, for example, that supported employment and supported postsecondary education programs can benefit this population, facilitating their participation in employment and postsecondary education (Cook, et al., 2005; Weiss et al., 2004). Another approach assumes that functioning in educational and employment settings is related to other aspects of functioning, and instead focuses more broadly on recovery, the process in which people are able to live, work, learn, and participate fully

in their communities (New Freedom Commission on Mental Health, 2003).

However, the ability of transition-age youth with SMHC to receive and benefit from services is limited by several factors. Currently available services for this population are fragmented and frequently inaccessible (Davis & Sondheimer, 2005). Interventions are frequently designed for either children or adults. Consequently, transitions between child and adult mental health systems are difficult, and effective transition-related services are frequently unavailable (Davis & Sondheimer, 2005). Furthermore, service providers are frequently not trained to work with this population (Davis & Koyanagi, 2005). Therefore, existing intervention programs are often not well suited for helping transition-age youth with SMHC to acquire the necessary skills for independent living, employment, and community integration, and to maintain those skills in adulthood. Many also fail to provide a developmentally appropriate balance between the needs and involvement of youth and of family members.

Previous NIDRR-funded work has documented the needs of this target population and has contributed to current knowledge of best practices in transition programs for

youth with SMHC (Deschenes & Clark, 2001; Jonikas et al., 2003). Other NIDRR-funded research has identified factors associated with better community adjustment in this population, such as initial levels of social adaptive behavior (Armstrong et al., 2003). However, there remains an insufficient evidence base in support of interventions to improve transition outcomes for this population. Specifically, further intervention research that utilizes comparison or control groups is needed (Davis, 2003; Davis & Koyanagi, 2005).

References:

Armstrong, K.J., Dedrick, R.F., & Greenbaum, P.E. (2003). Factors associated with community adjustment of young adults with serious emotional disturbance: A longitudinal analysis. Journal of Emotional and Behavioral Disorders, 11, 66-91.

Bobier, C., & Warwick, M. (2005). Factors associated with readmission to adolescent psychiatric care. Australian and New Zealand Journal of Psychiatry, 39, 600-606.

Cook, J.A., Lehman, A.F., Drake, R., McFarlane, W.R., Gold, P.B., Leff, H.S., Blyler, C., Toprac, M.G., Razzano, L.A., Burke-Miller, J.K., Blankertz, L., Shafer, M.,

Pickett-Schenk, S.A., & Grey, D.D. (2005). Integration of psychiatric and vocational services: A multisite randomized, controlled trial of supported employment. American Journal of Psychiatry, 162, 1948-1956.

Davis, M. (2003). Addressing the needs of youth in transition to adulthood. Administration and Policy in Mental Health, 30, 495-509.

Davis, M. & Koyanagi, C. (2005). Summary of center for mental health services youth transition policy meeting: National Experts Panel. Technical paper produced by University of Massachusetts Medical School and the Judge David L. Bazelon Center for Mental Health Law under contract #280-03-8082 with American Institutes of Research (AIR) who was supported by a contract with the Center for Mental Health Services (CMHS) of the Substance Abuse and Mental Health Services Administration.

Davis, M. & Sondheimer, D.L. (2005). State child mental health efforts to support youth in transition to adulthood. Journal of Behavioral Health Services & Research, 32, 27-36.

Deschenes, N. & Clark, H.B. (2001). Best practices in transition programs for youth with emotional and behavioral difficulties. Focal Point, 15, 14-17.

Geenen, S., Powers, L.E., & Lopez-Vasquez, A. (2005). Barriers against and strategies for promoting the involvement of culturally diverse parents in school-based transition planning. Journal for Vocational Special Needs Education, 27, 4-14).

Jonikas, J.A., Laris, A., & Cook, J.A. (2003). The passage to adulthood: Psychiatric rehabilitation service and transition-relate needs of young adult women with emotional and psychiatric disorders. Psychiatric Rehabilitation Journal, 27, 114-121.

Lubman, D. I., Allen, N. B., Rogers, N., Cementon, E., & Bonomor, Y. (2007). The impact of co-occurring modd and anxiety disorders among substance-abusing youth. Journal of Affective Disorders, 103, 105-112.

National Council on Disability (2008). Youth with Disabilities in the Foster Care System: Barriers to Success and Proposed Policy Solutions. http://www.ncd.gov/newsroom/publications/2008/FosterCareSystem_Report.html).

New Freedom Commission on Mental Health, Achieving the promise: Transforming mental health care in America. Final Report. Page 29425. DHHS Pub. No. SMA-03-3832. Rockville, MD: 2003.

Substance Abuse and Mental Health Services Administration, U.S. Department of Health and Human Services. (1993). Final notice. Federal Register, 58 (96), 29425.

Vander Stoep, A., Beresford, S.A.A., Weiss, N.S., McKnight, B., Cauce, A.M., & Cohen, P. (2000). Community-based study of the transition to adulthood for adolescents with psychiatric disorder. American Journal of Epidemiology, 152, 352-362.

Weiss, J., Maddox, D., Vanderwaeerden, M., & Szilvagyi, S. (2004). The Tri-County Scholars Program: Bridging the clubhouse and community college. American Journal of Psychiatric Rehabilitation, 7, 281-300.

Proposed Priority:

The Assistant Secretary for Special Education and Rehabilitative Services proposes a priority for a Rehabilitation Research and Training Center (RRTC) on Transition-Age Youth and Young Adults with Serious Mental Health Conditions (SMHC). This RRTC must conduct research that contributes to improved transition outcomes for youth with SMHC, including youth from high-risk, disadvantaged backgrounds. Under this priority, the RRTC must contribute to the following outcomes:

a) Improved and developmentally appropriate interventions for transition-age youth with SMHC (between the ages of 14 and 30 years, inclusive). SMHC is defined here as either serious emotional disturbance (for individuals under the age of 18 years) or serious mental illness (for those 18 years of age or older). The RRTC must contribute to this outcome by identifying or developing, and evaluating innovative interventions that meet the needs of transition-age youth with SMHC. The evaluation must include comparison or control groups. The RRTC must also utilize recovery-based outcome measures, including improved employment, education, and community integration, among youth with SMHC. The RRTC must involve youth with SMHC, and their families or family surrogates, in the processes of identifying or developing, and evaluating interventions.

b) New knowledge about interventions for transition-age youth with SMHC who are from disadvantaged backgrounds (e.g., youth who are transitioning from foster care, have substance abuse problems, have a history of abuse, or are from socio-economically disadvantaged backgrounds). The RRTC must contribute to this outcome by conducting research to identify or develop, and evaluate effective

interventions for these at-risk transition-age youth with SMHC.

c) Improved coordination between child and adult mental health services. The RRTC must contribute to this outcome by conducting research to identify and evaluate innovative solutions to financial, policy, and other barriers to smooth system integration.

d) Improved capacity building for service providers. This includes training and technical assistance with a particular emphasis on graduate, pre-service, and in-service training and curriculum development designed to prepare direct service providers for work with this population.

e) Increased incorporation of findings into practice or policy. The RRTC must contribute to this outcome by coordinating with the RRTC on Vocational Rehabilitation and with appropriate NIDRR-funded knowledge translation grantees to advance or add to their work in the following areas --

1) Collaborating with stakeholder groups to develop, evaluate, or implement strategies to increase utilization of findings; and

2) Conducting dissemination activities to increase utilization of mental health research findings.

Priority 3--Improving Measurement of Medical Rehabilitation Outcomes

Background:

Despite recent progress in medical rehabilitation outcomes measurement, improved capacity to measure outcomes is needed to advance the quality of research that can be used to assess the effectiveness of rehabilitation interventions and programs and improve clinical practice (Clohan et al., 2007). One of the central objectives of NIDRR-funded rehabilitation research is to "increase the number of validated new or improved methods for assessing function and health status" (NIDRR Long-Range Plan, 2005-2009, Executive Summary, 2007). To achieve this objective, quality state-of-the-art measures of medical rehabilitation outcomes and of the personal, clinical, and environmental factors that shape those outcomes are needed.

NIDRR-sponsored researchers have been leaders in the development of widely used measures that help determine the impact of medical rehabilitation on the health, functional abilities, activity levels, and community participation of individuals with disabilities. Applications of innovative

techniques for data collection, including item-response theory and computerized dynamic assessment technologies, have demonstrated great potential to increase efficiency and precision of rehabilitation outcomes data collection and measurement (Ware, 2003). Continued improvements in data collection and measurement methods to further advance the quality and rigor of disability and rehabilitation research will improve the capacity of practitioners to measure medical rehabilitation outcomes in a wide variety of settings and across disability groups.

The ability to measure outcomes of rehabilitation continues to mature through NIDRR-sponsored research. A recent state-of-the-science of Post-Acute Rehabilitation Symposium (Symposium) identified a number of emerging outcomes measurement topics that require a special focus (Heinemann, 2007).

One topic identified at the Symposium was the measurement of cognitive functioning. The ability to learn, as well as to attend to and participate in self-care, are critical skills associated with other successful medical rehabilitation outcomes (Johnston et al., 2007). Improved capacity to measure cognition is needed (Clohan et al., 2007). Cognition is both a rehabilitation outcome in

itself (Sayer et al, 2008), and a factor that is related to broader functional and community outcomes for individuals with a wide variety of disabling conditions (Van Baalen, Odding, & Stam, 2008; Hershkovitz et al., 2007).

Improved measures of cognition that can be applied across rehabilitation populations and settings are required to improve clinical practice. Current measures of cognition do not adequately capture the range of cognitive function present among individuals in medical rehabilitation settings (Hall et al., 1999; Schepers et al., 2006), and do not always reflect abilities that are relevant to performing activities in the community (Donovan et al., 2007).

Measurement of environmental factors associated with outcomes also was identified at the Symposium as a topic in need of further investigation. For example, post-acute care settings, including rehabilitation facilities, skilled nursing facilities, long-term care hospitals, home health agencies, and outpatient settings, are heterogeneous and have different staffing and care practices.

As with cognitive functioning, there has been an increase in the amount of research being conducted on the influence of environmental factors on medical

rehabilitation outcomes has increased in recent years. Research using the Community Integration Questionnaire demonstrates that the living environment is a prominent predictor of community integration (Reistetter & Abreu, 2005). Another study demonstrated that environmental factors were associated with the overall extent of participation for children and youth with acquired brain injuries after discharge from inpatient rehabilitation (Bedell, 2004). This increasing evidence that environmental factors are associated with rehabilitation outcomes has led to calls for development of health-related quality of life measures for individuals with disabilities that consider environmental causal indicators (Schwartz et al., 2007). These findings make the development of environmental measures and the incorporation of such measures into rehabilitation outcomes instrumentation critical.

Some groundwork for measurement of the environment has been laid in international efforts to define specific environments. The Quebec Model for the Handicap Creation Process (Fougeyrollas, 1993) was the first disability-related taxonomy to offer a classification of environmental factors that influence rehabilitation outcomes. This

taxonomy influenced the subsequent inclusion of environmental factors in the International Classification of Functioning, Disability and Health (ICF) (World Health Organization, 2001). With the publication of the ICF's taxonomy of environmental factors that may influence rehabilitation outcomes, measurement tools for these factors are needed. The Craig Hospital Inventory of Environmental Factors (Craig Hospital Research Department, 2001) is a measurement tool designed to implement the ICF's environmental factors taxonomy, but is not widely used.

Despite the current research and need in the field, state-of-the-art measures of cognition and of environmental factors for use across medical rehabilitation settings and subpopulations are not yet developed.

References:

Bedell, G.M. (2004). Developing a follow-up survey focused on participation of children and youth with acquired brain injuries after discharge from inpatient rehabilitation. NeuroRehabilitation, 19, 191-205

Clohan, D.B., Durkin, E.M., Hammel, J., Murray, P., Whyte, J., Dijkers, M., Gans, B.M., Graves, D.E., Heinemann, A.W., & Worsowicz, G. (2007). Postacute rehabilitation research and policy recommendations.

Archives of Physical Medicine and Rehabilitation, 88, 1535-1541.

Craig Hospital Research Department (2001). Craig Hospital Inventory of Environmental Factors (CHIEF) Manual, Version 3.0. Englewood: Craig Hospital.

Donovan, N.J., Kendall, D.L., Heaton, S.C., Kwon, S., Velozo, C., & Duncan, P.W. (2008). Conceptualizing functional cognition in stroke. Neurorehabilitation and Neural Repair. 22(2): 122-135.

Fougeyrollas, P. (1993). Explanatory models of the consequences of disease and trauma: the handicap creation process. ICIDH International Network 6.

Hall, K.M., Cohen, M.E., Wright, J., Call, M., Werner, P. (1999). Characteristics of the Functional Independence Measure in traumatic spinal cord injury. Archives of Physical Medicine and Rehabilitation, 80(11), 1471-1476.

Heinemann, A.W. (2007). State-of-the-science on postacute rehabilitation: Setting a research agenda and developing an evidence base for practice and public policy, an introduction. Archives of Physical Medicine and Rehabilitation, 88, 1478-1481.

Hershkovitz, A., Kalandariov, Z., Hermush, V., Weiss, R., & Brill, S. (2007). Factors affecting short-term

rehabilitation outcomes of disabled elderly patients with proximal hip fracture. Archives of Physical Medicine and Rehabilitation, 88(7), 916-921.

Johnston, M.V., Graves. D., & Greene, M. (2007). The uniform postacute assessment tool: Systematically evaluating the quality of measurement evidence. Archives of Physical Medicine and Rehabilitation, 88, 1505-1512.

National Institute on Disability and Rehabilitation Research. (2007). Long Range Plan for Fiscal Years 2005-2009: Executive Summary. http://www.ed.gov/rschstat/research/pubs/nidrr-lrp-05-09-exec-summ.pdf.

Reistetter, T.A. & Abreu, B.C. (2005). Appraising evidence on community integration following brain injury: A systematic review. Occupational Therapy International, 12, 196-217.

Sayer, N.A., Chiros, C.E., Sigford, B., Scott, S., Clothier, B., Pickett, T., & Lew, H.L. (2008). Characteristics and rehabilitation outcomes among patients with blast and other injuries sustained during the Global War on Terror. Archives of Physical Medicine and Rehabilitation, 89(1), 163-170.

Schepers, V.P., Ketelaar, M., Visser-Meily, J.M., Dekker, J., & Lindeman, E. (2006). Responsiveness of functional health status measures frequently used in stroke research. Disability and Rehabilitation, 28(17), 1035-1040.

Schwartz, C.E., Andresen, E.M., Nosek, M.A., & Krahn, G.L. (2007). Response shift theory: important implications for measuring quality of life in people with disability. Archives of Physical Medicine and Rehabilitation, 88, 529-536.

Van Baalen, B., Odding, E., & Stam, H. (2008). Cognitive status at discharge from the hospital determines discharge destination in traumatic brain injury patients. Brain Injury, 22(1), 25-32.

Ware, J. (2003). Conceptualization and measurement of health-related quality of life: comments on an evolving field. Archives of Physical Medicine and Rehabilitation, 84(4 Suppl 2): S43-S51.

World Health Organization (2001). ICF: International Classification of Functioning, Disability and Health. Geneva: World Health Organization ISBN 92 4 154544 5.

Proposed Priority:

The Assistant Secretary for Special Education and Rehabilitative Services proposes a priority for a Rehabilitation Research and Training Center (RRTC) on Measurement of Medical Rehabilitation Outcomes. This RRTC shall create and implement state-of-the-art measures for medical rehabilitation outcomes and identify the environmental factors that shape those outcomes. Under this priority, the RRTC must be designed to contribute to the following outcomes:

(a) New tools and measures that facilitate research to promote improved clinical practice in the field of medical rehabilitation. The RRTC must contribute to this outcome by developing valid and reliable measures of cognitive function for individuals who receive post-acute rehabilitation, as well as measures to assess environmental factors that impact outcomes among individuals with disabilities living in the community. The RRTC may also develop medical rehabilitation outcome measures in other areas where a demonstrated need has been identified in the literature. In order to promote efficient data collection, this Center must continue to develop and apply strategies such as item response theory and computer adaptive testing techniques. Measures developed by the RRTC should improve

the capacity of researchers and practitioners to measure medical rehabilitation outcomes in a wide variety of settings and across disability groups.

(b) Improved capacity to conduct rigorous medical rehabilitation outcomes research. The RRTC must contribute to this capacity by providing a coordinated and advanced program of training in medical rehabilitation research, focusing on research methodology, outcomes measurement development, and applied research experience that contributes to the number of qualified researchers working in the area of medical rehabilitation outcomes research.

(c) Collaboration with relevant NIDRR-sponsored projects, such as the Disability Rehabilitation Research Project (DRRP) on Classification and Measurement of Medical Rehabilitation Interventions, and other projects as identified through consultation with the NIDRR project officer.

Priority 4--Developing Strategies to Foster Community Integration and Participation for Individuals with Traumatic Brain Injury

Background:

The Centers for Disease Control and Prevention (CDC) report that at least 1.4 million individuals sustain a traumatic

brain injury (TBI) in the United States each year (Langlois, Rutland-Brown, and Thomas, 2006). Significant numbers of these individuals experience low levels of community integration (Gordon, Zafonte, Cicerone, Cantor, Brown, Lombard, et al., 2006). Community integration includes: assimilation (being able to fit in with other people and being accepted); social support (being part of a network of family, friends, and acquaintances); occupation (having meaningful and productive activity during the main part of the day); and independent living (independence in everyday tasks and in making everyday decisions and life choices) (Winkler, Unsworth, & Sloan,2006).

Although the findings for community integration and participation (CIP) for individuals with TBI vary, research indicates that the unemployment rate is 40-50 percent and the rate of social isolation is 50-60 percent (Franulic, Carbonell, Pinto, & Sepulveda, 2004). Other long-term consequences of TBI for CIP include financial dependence (Dikman, Machamer, & Temkin, 1993); divorce (Lezak, 1995); various forms of incarceration in places such as lockup care facilities, State hospitals, and prisons; and inability to perform instrumental activities of daily living such as working and earning a living, driving,

riding a bus, balancing a checkbook, and preparing meals. NIDRR continues to sponsor research on interventions to reduce the likelihood of these negative consequences, and promote CIP among individuals with TBI.

NIDRR has contributed to the knowledge base about CIP for individuals with TBI by funding research on: (a) clinical effects of TBI that impinge upon CIP (e.g., problems with cognition, executive function, awareness, affect, communication, social functioning, incontinence, sexual function, ambulation, pain, seizures, depression); (b) challenges faced by individuals with TBI in areas of CIP such as employment, marital stability, driving, and recreation; and (c) interventions to improve CIP for individuals with TBI that focus on improving or compensating for clinical effects of TBI and that utilize a variety of facilitators including State agency services, peer support, family support, case management, formal training, and telerehabilitation.

Developing effective strategies to foster participation for individuals with TBI is especially challenging because the diverse clinical effects of TBI result in considerable differences among individuals with regard to the difficulties that they experience in

conducting community activities. Environmental features that are barriers to some individuals with TBI are not barriers to others. The usefulness and generalizability of TBI intervention research typically have been limited because it is not clear under which of the many possible effects of TBI their findings apply. Research is needed to determine the characteristics of individuals who benefit from a given intervention or from one intervention more than others (Gordon, Zafonte, Cicerone, Cantor, Brown, Lombard, et al., 2006). Furthermore, basic and common classification systems of TBI are still needed (NIH Consensus Development Panel on Rehabilitation of Persons with Traumatic Brain Injury, 1999; Ragnarsson, 2006) to provide a basis for aggregating the findings of this research. NIDRR envisions that a sound classification of the clinical effects of TBI will substantially improve the ability of researchers and practitioners to: a) identify specific clinical consequences of a individuals's TBI that may interact with features of the community, resulting in barriers to the individual's participation in the community; b) identify subsets or classes of individuals with TBI who are facing similar barriers, and who may benefit from the same interventions; and c) develop

targeted interventions to promote the participation of specific subsets or classes of individuals with TBI who are facing similar barriers.

References:

Dikmen, S.S., Machamer, J.E., & Temkin, N.R. (1993). Psychosocial outcomes in patients with moderate to severe head injury: 2-year follow-up. Brain Injury, 7, 113-124.

Franulic, A., Carbonell, C.G., Pinto, P., & Sepulveda, I. (2004). Psychosocial adjustment and employment outcome 2, 5 and 10 years after TBI. Brain injury, 18, 119-129.

Gordon, W.A., Zafonte, R., Cicerone, K., Cantor, J., Brown, M., Lombard, L., et al. (2006). Traumatic brain injury rehabilitation: State of the science. Archives of Physical Medicine and Rehabilitation, 84, 343-382.

Langlois, J.A., Rutland-Brown, W., & Thomas, K.E. (2006). Traumatic brain injury in the United States: Emergency department visits, hospitalizations, and deaths. Atlanta, GA: Centers for Disease Control and Prevention, National Center for Injury Prevention and Control.

Lezak, M.D. (1995). Neuropsychological assessment. New York: Oxford University Press.

National Institute on Disability and Rehabilitation Research. (2006). Long Range Plan for Fiscal Years 2005-2009. http://www.ed.gov/about/offices/list/osers/nidrr/policy.htm l.

NIH Consensus Development Panel on Rehabilitation of Persons with Traumatic Brain Injury. (1999). Rehabilitation of persons with traumatic brain injury. Journal of the American Medical Association, 282, 974-983.

Ragnarsson, K.T. (2006). Traumatic brain injury research since the 1998 NIH Consensus Conference: Accomplishments and unmet goals. Journal of Head Trauma Rehabilitation, 21, 379-387.

Winkler, D., Unsworth, C., & Sloan, S. (2006). Factors that lead to successful community integration following severe traumatic brain injury. Journal of Head Trauma Rehabilitation, 21, 8-21.

Proposed Priority:

The Assistant Secretary for Special Education and Rehabilitative Services proposes a priority for a Rehabilitation Research and Training Center (RRTC) for Developing Strategies to Foster Community Integration and Participation for Individuals with Traumatic Brain Injury

(TBI). This RRTC must provide rigorous research, training, technical assistance, and dissemination to examine barriers to and facilitators of community integration and participation (CIP) for individuals with TBI; develop and validate a useful system for classifying individuals with TBI according to the clinical effects of TBI; and develop, implement, and evaluate interventions to improve long-term outcomes—including return to work--for individuals with TBI.

Under this priority, the RRTC must be designed to contribute to the following outcomes:

(a) New knowledge about the full range of clinical effects of TBI that are experienced by individuals with TBI. The RRTC must contribute to this outcome by developing and empirically validating a comprehensive list of the clinical effects of TBI that have potential to affect CIP, and provide methods for their identification. These clinical effects include, but are not limited to, the following categories: neurological (e.g., motor, sensory, autonomic functions, movement disorders, appearance, seizures, headaches, visual deficits, sleep disorders); medical (e.g., pulmonary, metabolic, nutritional, gastrointestinal, musculoskeletal, dermatologic,

degenerative disorders such as Parkinson's disease and Alzheimer's disease); cognitive (e.g., memory, attention and concentration, language, perception, executive/front lobe functions, problem solving, abstract reasoning, poor insight, judgment, planning, information processing organizational skills); and behavioral (e.g., aggression, agitation, impaired initiation, learning difficulties, impulsivity, social disinhibition, shallow self awareness, altered sexual functioning, mood disorders such as depression); as well as interactions among the above and their interactions with medications taken to control their effects.

(b) Improved quality of the knowledge base used to develop interventions that facilitate CIP for individuals with TBI. The RRTC must contribute to this outcome by --

(1) Developing new methods for classifying individuals with TBI based on the clinical effects identified in (a);

(2) Performing a comprehensive literature review to identify the kinds of barriers to CIP that tend to be associated with the clinical effects in this classification and to identify facilitators that tend to be effective in reducing these barriers; and

(3) Maximizing the likelihood of adoption of the classification scheme developed in (b)(1) in TBI rehabilitation research and practice by: ensuring expert input into the development of the classification; providing a practical validated "short" version of the classification; developing, field testing, and disseminating a comprehensive manual for using this classification for identifying barriers to CIP; and providing technical assistance to the public in the use of the manual.

(c) New interventions to improve the CIP of individuals with TBI. The RRTC must contribute to this outcome by identifying or developing, and then evaluating, interventions to improve the participation and community living of individuals with TBI. These interventions (which will not necessarily yet be validated, due to the time constraints imposed by the five-year length of this grant) must target individuals in specific classifications of TBI as well as barriers to participation established in priority paragraphs (a) and (b); and

(d) Improved participation and community living outcomes for individuals with TBI. The RRTC must contribute to this outcome by --

(1) Developing a systematic plan for widespread dissemination of informational materials to individuals with TBI and their family members, clinical practitioners, service providers, and members of the community. The RRTC must work with its NIDRR project officer to coordinate outreach and dissemination of research findings through appropriate venues such as State agencies and national organizations representing State government programs that administer a range of disability services and resources, the Department of Veterans Affairs Veterans Health Administration, the Department of Defense, and related veterans' service organizations; and

(2) Providing technical assistance to critical stakeholders such as consumers and their family members, clinical practitioners, service providers, and members of the community to facilitate the use of knowledge generated by the Center.

Rehabilitation Engineering Research Centers Program (RERCs)

The purpose of the RERC program is to improve the effectiveness of services authorized under the Rehabilitation Act of 1973, as amended, by conducting advanced engineering research and development on innovative technologies that are designed to solve particular

rehabilitation problems, or remove environmental barriers. RERCs also demonstrate and evaluate such technologies, facilitate service delivery system changes, stimulate the production and distribution of new technologies and equipment in the private sector, and provide training opportunities.

General Requirements of RERCs

RERCs carry out research or demonstration activities in support of the Rehabilitation Act of 1973, as amended, by--

- Developing and disseminating innovative methods of applying advanced technology, scientific achievement, and psychological and social knowledge to: (a) solve rehabilitation problems and remove environmental barriers; and (b) study and evaluate new or emerging technologies, products, or environments and their effectiveness and benefits; or

- Demonstrating and disseminating: (a) innovative models for the delivery of cost-effective rehabilitation technology services to rural and urban areas; and (b) other scientific research to assist in meeting the employment and independent living needs of individuals with severe disabilities; and

- Facilitating service delivery systems change through: (a) the development, evaluation, and dissemination of innovative consumer-responsive and individual- and family-centered models for the delivery to both rural and urban areas of innovative cost-effective rehabilitation technology services; and (b) other scientific research to assist in meeting the employment and independence needs of individuals with severe disabilities.

Each RERC must be operated by, or in collaboration with, one or more institutions of higher education or one or more nonprofit organizations.

Each RERC must provide training opportunities, in conjunction with institutions of higher education or nonprofit organizations, to assist individuals, including individuals with disabilities, to become rehabilitation technology researchers and practitioners.

Each RERC must emphasize the principles of universal design in its product research and development. Universal design is "the design of products and environments to be usable by all people, to the greatest extent possible, without the need for adaptation or specialized design" (North Carolina State University, 1997.

http://www.design.ncsu.edu/cud/about_ud/udprinciplestext.htm).

Additional information on the RERC program can be found at:

http://www.ed.gov/rschstat/research/pubs/index.html

Priorities 5, 6, and 7--Rehabilitation Engineering Research Centers (RERCs) on Telerehabilitation (Priority 5), Telecommunication (Priority 6), and Cognitive Rehabilitation (Priority 7)

Priority 5--Telerehabilitation

Background:

Telerehabilitation is the clinical application of consultative, preventative, diagnostic, and therapeutic therapy via two-way interactive audiovisual linkage performed in real time (Scheideman-Miller et al., 2002). Telerehabilitation was primarily developed to provide equitable access to individuals who are geographically remote and to those who are physically and economically disadvantaged (Theodoros & Russell, 2008). In addition, telerehabilitation is seen as a potential cost-saving tool to improve the quality of rehabilitation. Results from Dhurjaty (2004) demonstrate that telerehabilitation has a positive business case with respect to all stakeholders.

Providers favor telerehabilitation because it gives them the ability to quantify and analyze data from patients remotely, which is both convenient and economical. Patients benefit from telerehabilitation by getting back to their normal activities faster, both at home and work.

The use of image-based telerehabilitation, sensor-based telerehabilitation, and virtual environments and virtual reality telerehabilitation, have advanced the application of telerehabilitation in physiotherapy, speech-language pathology, occupational therapy, and biomedical engineering (Russell, 2007; Theodoros & Russell, 2008). For 10 years, NIDRR has contributed to these advances by funding research and development in telerehabilitation. Recent accomplishments include but are not limited to: new technologies to enhance a virtual reality telerehabilitation system that enables clients to assess the wheelchair accessibility of buildings (Yue, Kim, Wang, & Hamza, 2007); wheeled mobility and seating interventions provided in a remote location by an occupational or physical therapy practitioner via interactive secure videoconferencing (Schein, & Schmeler, 2007); an evaluation and comparison of seven instant messenger systems and remote communication techniques for telerehabilitation use

(Kim & Fuhrman, 2007); and an information technology infrastructure to support telerehabilitation (Parmanto, Saptono, Sugiantara, Brienza & Nnaji, 2006). However, further work in this area is needed in order to realize the potential benefits of telerehabilitation. The viability of telerehabilitation services in real world environments with large patient cohorts and the cost-benefit and cost-effectiveness of telerehabilitation require investigation (Russell, 2007). In addition, barriers such as implementation costs, technical standards, ethical issues, and reimbursement, may prevent the establishment and advancement of telerehabilitation within health care systems and require further examination (Feist-Price, 2002; Theodoros & Russell, 2008). Accordingly, NIDRR seeks to fund an RERC on Telerehabilitation to develop methods, systems, and technologies that support remote delivery of rehabilitation and addresses the barriers to successful telerehabilitation for individuals who have limited local access to comprehensive medical and rehabilitation outpatient services.

References:

Dhurjaty, S. (2004). The economics of telerehabilitation. Telemedicine Journal and e-Health. 10(2), 196-199.

Feist-Price, S. (2002, September 22). The use of telerehabilitation in assistive technology. The Free Library. See http://www.thefreelibrary.com/The use of telerehabilitation in assistive technology.-a094078142

Kim, J. & Fuhrman, Y. (2007). Comparison of web-based videoconferencing systems for telerehabilitation applications. 30th Annual RESNA Conference Proceedings. Arlington, VA: Rehabilitation Engineering Society of North America

Marshall, C.A., Sanderson, P.R., Johnson, S.R., Du Bois, B. & Kvedar, J.C. (2006). Chapter 2: Considering Class, Culture, and Access in Rehabilitation Intervention Research (pp. 26-40) In K.J. Hagglund & A.E. Heinemann (Eds.). (2006). Handbook of Applied Disability and Rehabilitation Research. New York: Springer.

Parmanto, B., Saptono, A., Sugiantara, W., Brienza, D. & Nnaji, B. (2006). Information technology infrastructure for supporting telerehabilitation. 29th Annual RESNA Conference Proceedings. Arlington VA: Rehabilitation Engineering Society of North America.

Russell, T.G. (2007). Physical rehabilitation using telemedicine. Journal of telemedicine and telecare, 13 (5), 217-20.

Scheideman-Miller, C., Clark, P.G., Moorad, A., Post, M.L., Hodge, B.G. & Smeltzer, S. (2003). Efficacy and sustainability of a telerehabilitation program. Proceedings of the 36th Hawaii International Conference on System Sciences. New Brunswick, NJ: Institute for Electrical and Electronic Engineers (IEEE).

Schein, R.M. & Schmeler, M. (2007). Telerehabilitation: A proposed innovative approach for rural wheelchair service delivery. 30th Annual RESNA Conference Proceedings. Arlington, VA: Rehabilitation Society of North America

Theodoros, D. & Trevor, R. (2008). Telerehabilitation: Current perspectives. In Current Principles and Practices of Telemedicine and E-Health, 191-209. Washington, DC: IOS press.

Priority 6--Telecommunication

Background:

Telecommunication is the extension of communication over a distance. Emerging telecommunications technologies offer several modes of conversation, allow for multiple

features in one device, and Internet Protocol (IP) technologies have the potential to enable phones to meet the distinct needs of individuals with disabilities (National Council on Disability, 2006). However, new telecommunications must be designed to be accessible and usable in order for individuals with disabilities to realize the benefits of telecommunications technologies.

Access to telecommunications technologies by individuals with disabilities still remains a problem in 2008. To draw more world-wide attention to this issue, the International Telecommunication Union adopted the theme, "Connecting Persons with Disabilities: Information and Communication Technologies (ICT) Opportunities for All," for this year's World Telecommunication and Information Society Day, May 17, 2008 (International Telecommunication Union, 2008, Theme 2008: Connecting Persons with Disabilities: ICT Opportunities for All Section, para. 1). The World Summit on the Information Society urged member States to: Address the special requirements of persons with disabilities in their national e-strategies and encouraged the design and production of ICT equipment and services suited to their needs, including adherence to the Universal Design Principle and use of assistive

technologies. A further call was made for research and development to facilitate accessibility of ICT for all, including people with disabilities (International Telecommunication Union, 2008, Theme 2008: Connecting Persons with Disabilities: ICT Opportunities for All Section, para. 2).

For over 10 years, NIDRR has contributed to advances in telecommunications access, telecommunications standards development, and emergency notification and communications. However, individuals with disabilities face several barriers to telecommunications access including the lack of interoperable communications-electronics systems or items, teletypewriter (TTY) compatibility issues, inaccessible interfaces, and inaccessible equipment (National Council on Disability, 2006). Better product engineering, increased industry and community partnerships, access to technology and IP, and implementation of standards may help to alleviate some of the access barriers to telecommunications. The use of universal design, i.e. products, services, and facilities that are designed from their inception to be accessible to and usable by the greatest range of individuals, regardless of their ability, and without the need for specialized adaptation, may help

to ensure that access features are incorporated into telecommunications technologies from the outset (National Council on Disability, 2004). Integrating accessibility features into standards and maintaining them as the standards evolve over time may further ensure telecommunications access for individuals with disabilities (Jaeger, 2006). Accordingly, NIDRR seeks to fund an RERC on Telecommunication to research and develop technological solutions to promote universal access to telecommunications systems and products including strategies for integrating current accessibility features into newer generations of telecommunications systems and products.

References:

International Telecommunication Union (2008). Theme 2008: Connecting Persons with Disabilities: Information and Communication Technologies (ICT) Opportunities for All. Geneva, Switzerland: Author. See http://www.itu.int/wtisd/2008/theme.html

Jaeger, P.T. (2006). Telecommunications policy and individuals with disabilities: Issues of accessibility and social inclusion in the policy and research agenda. Telecommunications Policy, 30, 112-124.

National Council on Disability (2004). Design for Inclusion: Creating a New Marketplace—Industry White Paper, Publication date: October 28, 2004.

National Council on Disability (2006). The Need for Federal Legislation and Regulation Prohibiting Telecommunications and Information Services Discrimination, Publication date: December 19, 2006.

Priority 7--Cognitive Rehabilitation

Background:

Cognitive disabilities affect more than 20 million individuals in the United States today (Scherer, 2005). The term cognitive disabilities describes a range of symptoms and conditions that are associated with intellectual functions and abilities such as difficulties learning, memorizing, information processing, problem solving, communication, and the ability to adapt to environmental demands due to orientation difficulties, problems with recognizing and responding to social cues, and more. The underlying causes of cognitive disabilities are numerous and include developmental disabilities, acquired brain injuries, stroke, Alzheimer's disease, and severe mental illness (Bodine, 2005).

Individuals with cognitive disabilities need assistance with performing a wide range of tasks and activities in daily life. While such assistance is provided largely by family members and care givers, clinicians, researchers, and rehabilitation engineers are developing technological products and interventions that assist individuals with cognitive disabilities with learning, memorizing, communicating, performing tasks and activities at home and work, and getting around in the community. Cognitive assistive technology has become more affordable and more widespread, and NIDRR has contributed to the research and development of cognitive technologies for five years. Examples of such technologies include learning software, handheld data assistants, user interfaces designed especially for individuals with cognitive disabilities, environmental control devices, and virtual reality technology (Lopresti et al., 2004; Mechling, 2007). Anecdotal evidence and data from small-scale studies show a positive effect of cognitive assistive technology on learning, communication, independent living skills acquisition, and the performance of simple work-related tasks (Agran et al., 2005; Man et al., 2006; Riffel et al., 2005). Further work is needed to ensure that

features that support individuals with disabilities are fully integrated and maintained in technology design and can be applied in vocational rehabilitation settings, career development programs, postsecondary education facilities, and places of work. Accordingly, NIDRR seeks to fund an RERC on Cognitive Rehabilitation to research, develop, and evaluate innovative technologies and approaches that will improve the ability of individuals with significant cognitive disabilities to function independently within their communities and workplaces.

References:

Agran, M., Sinclair, T., Alper, S., Cavin, M., Wehmeyer, M., & Hughes, C. (2005). Using self-monitoring to increase following-direction skills of students with moderate to severe disabilities in general education. Education and Training in Developmental Disabilities, 40, 3-13.

Bodine, C. (2005). Cognitive impairments, information technology systems and the workplace. Accessibility and Computing, 83, 25-29.

Lopresti, E.F., Mihailidis, A., & Kirsch, N. (2004). Assistive technology for cognitive rehabilitation: State

of the art. Neuropsychological Rehabilitation, 14(1/2), 5-39.

Man, D.W., Soong, W.Y., Tam, S.F., & Hui-Chan C.W. (2006). A randomized clinical trial study on the effectiveness of a tele-analogy-based problem-solving program for people with acquired brain injury (ABI). NeuroRehabilitation, 21(3), 205-217.

Mechling, L.C. (2007). Assistive technology as a self-management tool for prompting students with intellectual disabilities to initiate and complete daily tasks: A literature review. Education & Training in Developmental Disabilities, 42(3), 252-269.

Riffel, L.A., Wehmeyer, M.L., Turnbull, A.P., Lattimore, J., Davies, D., Stock, S., & Fisher, S. (2005). Promoting independent performance of transition-related tasks using a palmtop PC-based self-directed visual and auditory prompting system. Journal of Special Education Technology, 20(2), 5-14.

Scherer, M.J. (2005). Assessing the benefits of using assistive technologies and other supports for thinking, remembering and learning. Disability and Rehabilitation, 27(13), 731-739.

Proposed Priorities:

The Assistant Secretary for Special Education and Rehabilitative Services proposes the following three priorities for the establishment of (a) an RERC on Telerehabilitation (priority 5); (b) an RERC on Telecommunication (priority 6); and (c) an RERC on Cognitive Rehabilitation (priority 7). Within its designated priority research area, each RERC will focus on innovative technological solutions, new knowledge, and concepts that will improve the lives of individuals with disabilities.

(a) RERC on Telerehabilitation (Priority 5). Under this priority, the RERC must research and develop methods and systems that will support remote delivery of rehabilitation for individuals who have limited local access to comprehensive medical and rehabilitation outpatient services. The RERC must contribute to the continuing development of a telerehabilitation infrastructure and architecture, conduct research and development projects of technologies that can be used to deliver telerehabilitation services, and address the barriers to successful telerehabilitation to individuals who have limited access to rehabilitation services.

(b) RERC on Telecommunication (Priority 6). Under this priority, the RERC must research and develop technological solutions to promote universal access to telecommunications systems and products including strategies for integrating current accessibility features into newer generations of telecommunications systems and products. The RERC must contribute to the continuing development of interoperable telecommunications systems, items, and assistive technologies; conduct research and development projects that enable access to emerging telecommunications technologies; address the barriers to

successful telecommunication access; and participate in the development of telecommunications standards.

(c) RERC on Cognitive Rehabilitation (Priority 7). Under this priority, the RERC must research and develop methods, systems, and technologies that will improve existing assistive technologies for cognition; develop and test assistive technology products that enhance cognitive functions needed to perform daily tasks and activities at home, school, work, and in the community; and develop, test, and implement cognitive assistive technology training programs and materials for professional use as well as for consumer use.

Under each priority, the RERC must be designed to contribute to the following outcomes:

(1) Increased technical and scientific knowledge base relevant to its designated priority research area. The RERC must contribute to this outcome by conducting high-quality, rigorous research and development projects.

(2) Innovative technologies, products, environments, performance guidelines, and monitoring and assessment tools as applicable to its designated priority research area. The RERC must contribute to this outcome through the development and testing of these innovations.

(3) Improved research capacity in its designated priority research area. The RERC must contribute to this outcome by collaborating with the relevant industry, professional associations, and institutions of higher education.

(4) Improved focus on cutting edge developments in technologies within its designated priority research area. The RERC must contribute to this outcome by identifying and communicating with NIDRR and the field regarding trends and evolving product concepts related to its designated priority research area.

(5) Increased impact of research in the designated priority research area. The RERC must contribute to this outcome by providing technical assistance to public and private organizations, individuals with disabilities, and employers on policies, guidelines, and standards related to its designated priority research area.

(6) Increased transfer of RERC-developed technologies to the marketplace. The RERC must contribute to this outcome by developing and implementing a plan for ensuring that all technologies developed by the RERC are made available to the public. The technology transfer plan must be developed in the first year of the project period in

consultation with the NIDRR-funded Disability Rehabilitation Research Project, Center on Knowledge Translation for Technology Transfer.

In addition, under each priority, the RERC must--

- Have the capability to design, build, and test prototype devices and assist in the transfer of successful solutions to relevant production and service delivery settings;

- Evaluate the efficacy and safety of its new products, instrumentation, or assistive devices;

- Provide as part of its proposal, and then implement, a plan that describes how it will include, as appropriate, individuals with disabilities or their representatives in all phases of its activities, including research, development, training, dissemination, and evaluation;

- Provide as part of its proposal, and then implement, in consultation with the NIDRR-funded National Center for the Dissemination of Disability Research (NCDDR), a plan to disseminate its research results to individuals with disabilities, their representatives, disability organizations, service providers, professional journals, manufacturers, and other interested parties;

- Conduct a state-of-the-science conference on its designated priority research area in the fourth year of the project period, and publish a comprehensive report on the final outcomes of the conference in the fifth year of the project period; and

- Coordinate research projects of mutual interest with relevant NIDRR-funded projects, as identified through consultation with the NIDRR project officer.

Types of Priorities:

When inviting applications we designate the priorities as absolute, competitive preference, or invitational. The effect of each type of priority follows:

Absolute priority: Under an absolute priority, we consider only applications that meet the priority (34 CFR 75.105(c)(3)).

Competitive preference priority: Under a competitive preference priority, we give competitive preference to an application by either (1) awarding additional points, depending on how well or the extent to which the application meets the competitive preference priority (34 CFR 75.105(c)(2)(i)); or (2) selecting an application that meets the competitive preference priority over an

application of comparable merit that does not meet the priority (34 CFR 75.105(c)(2)(ii)).

Invitational priority: Under an invitational priority, we are particularly interested in applications that meet the invitational priority. However, we do not give an application that meets the invitational priority a competitive or absolute preference over other applications (34 CFR 75.105(c)(1)).

We will announce the final priorities in one or more notices in the Federal Register. We will determine the final priorities after considering responses to this notice and other information available to the Department. This notice does not preclude us from proposing or using additional priorities, subject to meeting applicable rulemaking requirements.

Note: This notice does not solicit applications. In any year in which we choose to use these proposed priorities, we invite applications through a notice in the Federal Register.

Executive Order 12866: This notice of proposed priorities has been reviewed in accordance with Executive Order 12866. Under the terms of the order, we have assessed the potential costs and benefits of this regulatory action.

The potential costs associated with this notice of proposed priorities are those resulting from statutory requirements and those we have determined as necessary for administering this program effectively and efficiently.

In assessing the potential costs and benefits--both quantitative and qualitative--of this notice of proposed priorities, we have determined that the benefits of the proposed priorities justify the costs.

Discussion of costs and benefits:

The benefits of the Disability and Rehabilitation Research Projects and Centers Programs have been well established over the years in that similar projects have been completed successfully. These proposed priorities will generate new knowledge and technologies through

research, development, dissemination, utilization, and technical assistance projects.

Another benefit of these proposed priorities is that the establishment of new RRTCs and new RERCs will support the President's NFI and will improve the lives of individuals with disabilities. The RRTCs and RERCs will generate, disseminate, and promote the use of new information that will improve the options for individuals with disabilities to perform regular activities in the community.

Intergovernmental Review

This program is not subject to Executive Order 12372 and the regulations in 34 part 79.

Alternative Format: Individuals with disabilities can obtain this document in an alternative format (e.g., Braille, large print, audiotape, or computer diskette) on request to the contact person listed under FOR FURTHER INFORMATION CONTACT.

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Note: The official version of this document is the document published in the Federal Register. Free Internet access to the official edition of the Federal Register and the Code of Federal Regulations is available on GPO Access at: www.gpoaccess.gov/nara/index.html

Dated:

Tracy R. Justesen,
Assistant Secretary for
Special Education and
Rehabilitative Services.